

AMENDMENTS TO THE CLAIMS

Please amend claims 1, 3, 13, and 15 as follows.

- 1 1. (currently amended) A computer implemented method of modifying data in a
2 database system, the method comprising the steps of:
3 ~~Constructing~~constructing work granules that manipulate rows in a manner that groups
4 the rows within said work granules according to logical storage units that
5 contain the rows; and
6 ~~During~~during execution by an entity of a particular work granule that involves
7 manipulation operations for rows in a logical storage unit:
8 ~~Causing~~causing said entity to perform said manipulation operation for rows
9 completely contained in said logical storage unit;
10 ~~Determining~~determining that a set of spanning rows that are partially
11 contained in said logical storage unit satisfy a particular condition that
12 relates to which portion of each spanning row of said set of spanning
13 rows resides in said logical storage unit; and
14 causing said entity to perform said manipulation operations for all pieces of all
15 spanning rows in said set of spanning rows based on the step of
16 determining, and
17 ~~Wherein~~wherein said work granules are executed as part of a transaction that
18 includes a first subtransaction and a second subtransaction, wherein a
19 first work granule is executed as part of said first subtransaction and a
20 second work granule is executed as part of said second subtransaction.

- 1 2. (original) The method of Claim 1, wherein said particular condition is that each
2 spanning row in said set start in said logical storage unit.

1 3. (currently amended) The method of Claim 1, wherein:

2 ~~said work granules include:~~

3 ~~at~~the first work granule that involves manipulation operations for a first logical storage
4 unit that includes a portion of a row; ~~and;~~

5 ~~at~~the second work granule that involves manipulation operations for a second logical
6 storage unit that also includes another portion of said row;

7 the method further includes:

8 during execution of said first work granule,

9 determining that said row satisfies said particular condition, and

10 in response to determining that said row satisfies said particular

11 condition, performing a manipulation operation for said row;

12 and

13 during execution of said second work granule,

14 determining that said row does not satisfy said particular condition,

15 and

16 in response to determining that said row does not satisfy said particular

17 condition, foregoing any manipulation operation for said row.

1 4. (canceled)

1 5. (original) The method of Claim 1, wherein

2 said first work granule involves manipulation operations for a first logical storage unit
3 that includes a portion of a row;

4 said second work granule involves manipulation operations for a second logical
5 storage unit that also includes another portion of said row; and

6 the method further includes executing a manipulation operation for said row as part of
7 said first subtransaction.

1 6. (original) The method of Claim 5, wherein said first logical storage unit contains a
2 first transaction list with a first entry, wherein said second logical storage unit
3 contains a second transaction list with a second entry, wherein said step of executing
4 a manipulation operation for said row includes assigning ownership of said first entry
5 and said second entry to said first subtransaction.

1 7. (original) The method of Claim 1, wherein said particular logical storage unit
2 includes a data block in said database system.

1 8. (previously presented) A method of inserting rows into logical storage units that store
2 information in a database system, the method comprising the steps of:
3 inserting a first row piece of a spanning row into a first logical storage unit of said
4 logical storage units;
5 wherein a certain data structure in each logical storage unit of said logical storage
6 units is used to identify interested transactions and is not used to store any row
7 of said each logical storage unit;
8 prior to inserting a second row piece of said spanning row into a second logical
9 storage unit, determining whether one or more criteria is satisfied, wherein
10 said one or more criteria include that said second logical storage unit has
11 enough space allocated to allow the respective certain data structure to
12 identify at least a threshold number of interested transactions; and
13 inserting said second row piece of said spanning row into said second logical storage
14 unit only when said one or more criteria are satisfied.

1 9. (canceled)

1 10. (original) The method of Claim 9, wherein said certain data structure is a transaction
 2 list with entries, wherein each entry of said entries may be owned by an interested
 3 transaction.

1 11. (original) The method of Claim 8, wherein said one or more criteria include that said
 2 second row piece be the second or greater row piece in said spanning row.

1 12. (original) The method of Claim 8, wherein said threshold number is greater than the
 2 sum of the quantity of overflow row pieces stored in said second logical storage unit
 3 after inserting said second row piece.

1 13. (currently amended) A computer-readable medium carrying one or more sequences of
 2 instructions for modifying data in a database system, wherein execution of the one or
 3 more sequences of instruction by one or more processors to perform the steps of:

4 ~~Constructing~~constructing work granules that manipulate rows in a manner that groups
 5 the rows within said work granules according to logical storage units that
 6 contain the rows; and

7 ~~During~~during execution by an entity of a particular work granule that involves
 8 manipulation operations for rows in a logical storage unit:

9 ~~Causing~~causing said entity to perform said manipulation operations for rows
 10 completely contained in said logical storage unit;

11 ~~Determining~~determining that a set of spanning rows that are partially
 12 contained in said logical storage unit satisfy a particular condition that
 13 relates to which portion of each spanning row of said set of spanning
 14 rows resides in said logical storage unit; and

15 causing said entity to perform said manipulation operations for all pieces of all
 16 spanning rows in said set of spanning rows based on the step of
 17 determining, and
 18 ~~Wherein~~wherein said work granules are executed as apart of a transaction that
 19 includes a first subtransaction and a second subtransaction, wherein a
 20 first work granule is executed as part of said first subtransaction and a
 21 second work granule is executed as part of said second subtransaction.

1 14. (original) The computer-readable media of Claim 13, wherein said particular
 2 condition is that each spanning row in said set start in said logical storage unit.

1 15. (currently amended) The computer-readable media of Claim 13, wherein:
 2 ~~said work granules include:~~
 3 ~~at~~the first work granule that involves manipulation operations for a first logical storage
 4 unit that includes a portion of a row, ~~and;~~
 5 ~~at~~the second work granule that involves manipulation operations for a second logical
 6 storage unit that also includes another portion of said row;
 7 the computer-readable media further includes instructions for performing:
 8 during execution of said first work granule,
 9 determining that said row satisfies said particular condition, and
 10 in response to determining that said row satisfies said particular
 11 condition, performing a manipulation operation for said row;
 12 and
 13 during execution of said second work granule,
 14 determining that said row does not satisfy said particular condition,
 15 and

16 in response to determining that said row does not satisfy said particular
17 condition, foregoing any manipulation operation for said row.

1 16. (canceled)

1 17. (original) The computer-readable media of Claim 13, wherein
2 said first work granule involves manipulation operations for a first logical storage unit
3 that includes a portion of a row;
4 said second work granule involves manipulation operations for a second logical
5 storage unit that also includes another portion of said row; and
6 the computer-readable media further includes instructions for executing a
7 manipulation operation for said row as part of said first subtransaction.

1 18. (original) The computer-readable media of Claim 17, wherein said first logical
2 storage unit contains a first transaction list with a first entry, wherein said second
3 logical storage unit contains a second transaction list with a second entry, wherein
4 said step of executing a manipulation operation for said row includes assigning
5 ownership of said first entry and said second entry to said first subtransaction.

1 19. (original) The computer-readable media of Claim 13, wherein said particular logical
2 storage unit includes a data block in said database system.

1 20. (previously amended) A computer-readable medium carrying one or more sequences
2 of instructions for inserting rows into logical storage units that store information in a
3 database system, wherein execution of the one or more sequences of instructions by
4 one or more processors causes the one or more processors to perform the steps of:
5 inserting a first row piece of a spanning row into a first logical storage unit of said
6 logical storage units;

7 wherein a certain data structure in each logical storage unit of said logical storage
 8 units is used to identify interested transactions and is not used to store any row
 9 of said each logical storage unit;
 10 prior to inserting a second row piece of said spanning row into a second logical
 11 storage unit, determining whether one or more criteria is satisfied, wherein
 12 said one or more criteria include that said second logical storage unit has
 13 enough space allocated to allow the respective certain data structure to
 14 identify at least a threshold number of interested transactions; and
 15 inserting said second row piece of said spanning row into said second logical storage
 16 unit only when said one or more criteria are satisfied.

1 21. (canceled)

1 22. (original) The computer-readable media of Claim 21, wherein said certain data
 2 structure is a transaction list with entries, wherein each entry of said entries may be
 3 owned by an interested transaction.

1 23. (original) The computer-readable media of Claim 20, wherein said one or more
 2 criteria include that said second row piece be the second or greater row piece in said
 3 spanning row.

1 24. (original) The computer-readable media of Claim 20, wherein said threshold number
 2 is greater than the sum of the quantity of overflow row pieces stored in said second
 3 logical storage unit after inserting said second row piece.